

Claims

What is claimed is:

1. A robust method for image feature estimation comprising:
 - a. receiving at least one learning image input;
 - b. accumulating a weight image from the at least one learning image;
 - c. processing the input image using the accumulated weight image to produce a weight image output
2. The method of claim 1 wherein the accumulated weight image comprises a weighted mean image.
3. The method of claim 1 wherein the accumulated weight image comprises a weighted mean of square image.
4. The method of claim 1 wherein the accumulation rule includes an exponential type moving average.
5. The method of claim 1 wherein the accumulation rule includes a simple average.
6. The method of claim 1 wherein the weight image is derived from an intra-weight image mixed with an inter-weight image.
7. The method of claim 6 wherein the mixing method is a minimum operation.
8. The method of claim 6 wherein the mixing method is a simple average operation.
9. The method of claim 6 wherein the mixing method is a maximum operation.
10. The method of claim 1 wherein the weight image is derived from mixing
 - a. an intra-deviation image
 - b. an intra-weight image;
 - c. an inter-deviation image;
 - d. an inter-weight image.
11. A robust method for image feature estimation comprising:
 - a. receiving at least one image input;
 - b. adjusting a weight image by iteration responsive to a cost function

- c. estimating using the adjusted weight image to produce a fitting result.
- 12. The method of claim 11 wherein the weigh image is modified using a factor that is a non-increasing function of the fitting error.
- 13. The method of claim 12 wherein the factor is a function of a parameter T.
- 14. The method of claim 13 wherein a simulated annealing method is used to modify the weight image.
- 15. The method of claim 14 wherein T is non-increasing with respect to the number of iterations.
- 16. The method of claim 13 wherein T is a constant.
- 17. The method of claim 11 wherein adjusting a weight image by iteration further comprises
 - a. performing fitting using an adjusted weight image to generate a fitting result;
 - b. determine cost function values from the fitting result;
 - c. adjusting the weight image using cost function values;
 - d. repeat steps a, b, and c until a stopping criteria is met.
- 18. The method of claim 17 wherein the stopping criteria is determined by the maximum allowable error.
- 19. The method of claim 17 wherein the stopping criteria is determined by the maximum allowed number of iterations.